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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,765	07/11/2005	David Lee Sandbach	9637-076/NP	6038
27572	7590	03/01/2007	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			DUNLAP, JONATHAN M	
		ART UNIT	PAPER NUMBER	
		2855		
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/01/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,765	SANDBACH ET AL.	
	Examiner	Art Unit	
	Jonathan Dunlap	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 February 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-17 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on July 11, 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :July 11, 2005/
November 18, 2005.

DETAILED ACTION

Receipt is acknowledged of Applicant's election of **Group I, claims 1-16**, dated February 9, 2007. Furthermore, the Examiner has considered the amendment made to **claim 17** and agrees that it now is in condition for entry into **Group I**. Claims 18-19 have been cancelled and **claims 1-17** are pending in this application. An Office Action on the merits is to follow.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "2603" has been used to designate both an electrical terminal and a layer of elastic electroconductive fabric. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of

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an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

- Page 12, lines 16-17, "bottom of each conductive fabric **1004 to 1008**," is objected to because Applicant has previously stated that **1004-1007** were surfaces which have electroconductive fabric portions **attached** to them, mainly **1008-1009**. [Emphasis Added]

- Page 21, line 20, "arrangement and is similar," should be rewritten as ---"arrangement is similar"---
- Page 23, line 26, "Figure that conductive," should be rewritten as ---"figure that conductive"---

- Pages 24-25, lines 16-17 and 3 respectively, a reference to **2603** is made in the context that this reference is a electrical point terminal, but the same reference number has been previously used to reference a layer of elastic electroconductive material.

Appropriate correction is required.

Claim Rejections - 35 USC § 112 and § 101

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17, as written, will be rejected under 35 U.S.C. 112 and 35 U.S.C. 101 because a single claim, which claims both an apparatus and the method steps of using the apparatus, is indefinite under USC 112, second paragraph. This type of claim is indefinite because it fails to positively recite the boundaries of protection. The metes and bounds of the claim cannot be determined because it is unclear whether protection is sought for the method or for the apparatus.

MPEP 2173.05 (p) (II) States:

PRODUCT AND PROCESS IN THE SAME CLAIM

A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. *> IPXL Holdings v. Amazon.com, Inc., 430 F.2d 1377, 1384, 77 USPQ2d 1140, 1145 (Fed. Cir. 2005); <Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990) >(< claim directed to an automatic transmission workstand and the method * of using it * held ** ambiguous and properly rejected under 35 U.S.C. 112, second paragraph>)<*. Such claims *>may<* also be rejected under 35 U.S.C. 101 based on the theory that the claim is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Id.* at 1551.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1-2, 7, 9-13, 16-17** are rejected under 35 U.S.C. 102(b) as being anticipated by Eventoff (U.S. Patent 4,810,992).

Considering claim 1, Eventoff discloses a manually deformable input device 300 or 20 responsive to manually applied pressure (**Figure 1 and 12a; Column 7, line 51-57**), comprising:

- A deformable resilient element 314 or 24 configured to deform in response to said manually applied pressure (**Figures 1, 12a and 12b; Column 3, lines 43-67; Column 7, lines 35-40, lines 51-57; Column 8, lines 19-31**), operatively coupled with:
 - An electroconductive material 324, 54, 56 (any) applied configured to exhibit changes in conductance (resistance) in response to being stretched (**Figures 1, 9 and 12b; Column 2, lines 29-47; Column 3, lines 65-68; Column 4, lines 1-42; Column 6, lines 19-31; Column 7, lines 51-57**); and
 - An electrical interface device 326 configured to supply electrical current via 328 through said electroconductive material 324 via a first terminal 306 and a second terminal 304, where:
 - A third terminal 316 or 318 is connected at an intermediate position (**Figure 12a; Column 7, lines 36-38**); and

- Said interface device 326 is configured to receive a voltage from said third terminal 316 or 318 (**Figure 12a and b; Column 1, lines 61-68; Column 2, lines 1-11; Column 8, lines 4-10**).

Considering **claim 2**, Eventoff discloses that said electroconductive material 324,54,56 is applied over said deformable resilient element 24 (**Figures 3; Column 3, lines 65-66; Column 4, lines 15-18**).

Considering **claim 7**, Eventoff disclose that said electroconductive material 216 is an elastomeric material having electroconductive components therein (**Column 6, lines 49-52**).

Considering **claim 9**, Eventoff discloses that the conductance of said electroconductive material 54 increases when said material 54 is stretched (**Column 6, lines 25-31**).

Considering **claim 10**, Eventoff discloses that said interface device 326 is configured to measure a divided voltage between said first terminal and said second terminal (**Figure 12a; Column 8, lines 10-14, lines 4-10; Column 7, lines 13-25**).

Considering **claim 11**, Eventoff discloses that said interface device 326 is configured to produce an output signal (**Figure 12a; Column 1, lines 27-39; Column 6, lines 32-37; Column 8, lines 23-26**).

Considering **claim 12**, Eventoff discloses that said output signal is used to: control a motor; provide an input command to a game; raise an alarm condition; raise a visual, aural or tactile effect response; control a cursor; navigate a menu (**Column 1, lines 27-39**).

Considering **claim 13**, Eventoff discloses that the device **300** is configured to be responsive to translation, rotation, compression or indentation **F** of said deformable resilient element **314** (**Figure 12b; Column 8, lines 4-10b**).

Considering **claim 16**, Eventoff discloses that the device further comprises a fourth terminal (**Figures 2-12a and 13-14b; For example, but not exhaustive, 26,28,30 or 32 of Figure 9; Column 5, lines 45-50**).

Because **claim 17** claims two statutory classes of invention, it is being interpreted as best read on **claim 1**.

Considering **claim 17**, Eventoff discloses a method of detecting deformation of a deformable input device, said input device comprising:

- A deformable resilient element **314** or **24** configured to deform in response to applied pressure (**Figures 1, 12a and 12b; Column 3, lines 43-67; Column 7, lines 35-40, lines 51-57; Column 8, lines 19-31**), operatively coupled with:
 - An electroconductive material **324, 54, 56 (any)** configured to exhibit changes in conductance (resistance) in response to being stretched (**Figures 1, 9 and 12b; Column 2, lines 29-47; Column 3, lines 65-68; Column 4, lines 1-42; Column 6, lines 19-31; Column 7, lines 51-57**);
 - A first electrical terminal **306**, a second electrical terminal **304**, and a third electrical terminal **316 or 318**, said third terminal at a position intermediate said first terminal **306** and said second terminal **304**; and

- An electrical interface device 326 configured to supply electrical current via 328 through said electroconductive material 324 via said first terminal 306 and said second terminal 304 (**Figure 12a and b; Column 1, lines 61-68; Column 2, lines 1-11; Column 7, lines 36-38; Column 8, lines 4-10**).
- Said method comprising the steps of:
 - Establishing a voltage gradient across said electroconductive material 324 via said first terminal 306 and said second terminal 304 (**Figure 12a; Column 7, lines 67-68; Column 8, lines 1-10**); and
 - Measuring a voltage appearing at said third terminal 316 or 318 (**Figure 12a; Column 8, lines 4-14**).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 3-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Eventoff (4,810,992)** in view of **Lizasoain et al. (U.S. Patent 3,398,233)**.

The invention by Eventoff discloses all of the claimed limitations of **claim 1** but fails to disclose, according to claim 3, that the electroconductive material is embedded

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within the deformable element and according to claim 4, that the deformable resilient element is constructed from a foam or foam-like material, rubber or silicon rubber.

4. However, Lizasoain teaches:

Considering **claim 3**, that said electroconductive material is embedded within said deformable element (**Column 3, lines 8-19; Column 4, lines 63-69**)

Considering **claim 4**, that said deformable resilient element is constructed from a foam or foam-like material, rubber or silicone rubber (**Column 2, lines 19-38**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an electroconductive material embedded into a deformable element that is made of foam or rubber as taught by Lizasoain in the invention by Eventoff. The motivation for doing so is found in the teachings of Lizasoain, "The present invention provides an electrical element which has the property of increasing its electroconductivity in conformance with the magnitude of an externally applied force regardless of whether it be of compression or expansion" (**Column 1, line 72; Column 2, lines 1-4**).

5. **Claims 5-6, 8 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Eventoff (4,810,992) in view of Gibson et al. (U.S. Patent 4,689,873).

The invention by Eventoff discloses all of the claimed limitations of **claim 1** but fails to disclose, according to claim 5, that the electroconductive material is electroconductive material is a textile fabric and according to claim 6, that the textile

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fabric is a warp knit, a weft knit or a weave that includes conductive fibres and according to claim 14, that the device comprises a frame.

6. However, Gibson teaches:

Considering **claim 5**, that said electroconductive material **14** is a textile fabric

Considering **claim 6**, that said textile fabric is a warp knit, a weft knit or a weave that includes conductive fibres **20,22 (Figure 1; Column 3, lines 28-39)**.

Considering **claim 8**, teaches that said deformable resilient element and said electroconductive material are provided by an elastomeric electroconductive textile (**Figure 3; Column 4, lines 34-44; resilient element is electroconductive material**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a electroconductive textile fabric comprised of warped, weft or weaved conductive fibers as taught by Gibson in the invention by Eventoff. The motivation for doing so is found in the teachings of Gibson, in that Gibson teaches "an electrographic touch sensor employing simplified fabrication and materials of reduced cost resulting in lowered manufacturing costs" (**Column 1, lines 7-12**).

7. Furthermore, Gibson teaches, considering **claim 14**, that the device comprises a frame (**Figure 6; Column 5, lines 48-63**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a frame as taught by Gibson in the invention by Eventoff. The motivation for doing so is found in the teachings of Gibson,

in that Gibson teaches "There are applications where it would be desireable to retrofit a video display with a touch sensor" (**Column 5, lines 42-47**).

8. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Eventoff (4,810,992) in view of Asher (U.S. Patent 5,689,285).

The invention by Eventoff discloses all of the claimed limitations of **claim 1** but fails to disclose, according to claim 15, that the device comprises a gripping member.

9. However, Asher teaches, considering **claim 15**, that the device comprises a gripping member (**Figure 1; Column 17-27, 45-61; Column 4, lines 49-66**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a gripping member as taught by Asher in the invention by Eventoff. The motivation for doing so is found in the teachings of Asher, "Many computer, consumer, and industrial applications will require a joystick controller that is very low cost...[and]...the present invention employs a simple interface that both measures the membrane sensor and then converts these analog signals into a format which is easily interfaced to microcontrollers..." (**Column 3, lines 16-41**).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sandbach, Sandbach et al., Eventoff, Burgess, Ohkawa, Michalchik, and Otano et al. The Examiner is aware of all co-pending and published applications as well as patents by all contributing inventors. Any inquiry concerning this communication or earlier communications from the examiner should be directed to

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Jonathan Dunlap whose telephone number is (571) 270-1335. The examiner can normally be reached on M-F 8-5 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jonathan Dunlap
Examiner
Art Unit 2855
February 21, 2007



EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800